

REMARKS

Claims 92-107 were pending in the application. Claims 101 and 104-107 have been canceled. Claims 92-100 have been amended. Accordingly, upon entry of the amendments presented herein, claims 92-100 and 102-103 will be pending. Support for the amendments can be found throughout the specification and claims as originally filed. *No new matter has been added.*

The claim amendments presented herein should in no way be construed as acquiescence to any of the rejections and have been made solely to expedite prosecution of the application. Applicants reserve the right to pursue the claims as originally filed and/or prior to amendment herein in this or a separate application(s).

Applicants have updated the priority information in the specification as requested by the Examiner.

The Examiner states that the title of the specification and the Abstract of the Disclosure are not descriptive and has requested the submission of a new title and a new Abstract. Accordingly, Applicants have amended the title of the specification and the Abstract of the Disclosure to clearly indicate the invention to which the presently pending claims are directed. Accordingly, Applicants respectfully request that these objections be withdrawn.

The Specification has been reviewed and all spelling, TRADEMARKS, and like errors have been corrected by the amendments set forth above.

Rejection of Claims 92-107 Under 35 U.S.C. §112, First Paragraph

The Examiner has rejected claims 92-107 under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner is of the opinion that:

[t]he specification as filed does not provide written description support for the structural characteristics that define the claimed CD2 ligand and a CD28 ligand or

CTLA-4 ligand as well as the claimed 'agents' that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor on the T cell, other than those disclosed in the specification as filed.

With respect to claims 101 and 104-107, cancelation of these claims has rendered the Examiner's rejection moot. With respect to claims 92-100 and 102-103, Applicants respectfully traverse this rejection, however in the interest of expediting prosecution, Applicants have amended the claims to specifically recite that the CD2 ligand is CD59, and that the CD28 or CTLA4 ligand is selected from the group consisting of B7-1, B7-2 and combinations thereof.

With respect to the Examiner's rejection of the claims for the use of the term "agent", Applicants submit that the term "agent" is standard claim terminology. Moreover, the term "agent" along with a functional definition of the agent, provides adequate description such that one of skill would understand in the context of the teachings of the specification as well as the state of the art at the time of Applicants' invention, that the inventors were in possession of the claimed invention, including the administration of such "agents". For instance, it is well known in the art that "agents" such as cytokines (*i.e.* IL-2, IL-4, IL-15) produced by concurrently combining an "agent" that cross-links the T cell receptor with an antigen with a costimulatory "agent", such as an antibody against B7, or "agents" such as PMA and ionomycin, induce T cell growth and activation. It is also known in the art that "agents" such as antibodies to CTLA-4 and immunosuppressive drugs such as Cyclosporine A and Rapamycin inhibit the growth of T cells. These "agents" are all well known in the art and are commercially available.

Regarding claim 98, drawn to a method for stimulating a T cell response to a tumor cell in a subject with a tumor, comprising modifying the tumor cell to CD59 and a CD28 or CTLA4 ligand, and further comprising contacting T cells of the subject with an "agent" that stimulates exposure of a T11.3 neo-epitope on a CD2 surface receptor on the T cell, Applicants respectfully submit that there is sufficient written description in Applicants' specification regarding agents that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor to inform a skilled artisan that Applicants were in possession of the claimed invention at the time the application was filed, as required by section 112, first paragraph (see M.P.E.P. 2163.02). For example, the specification teaches that in order to carry out the claimed invention, T cells of the subject are contacted with an agent that stimulates exposure of a T11.3 neo-epitope on a CD2 surface

receptor on the T cell. More specifically, Applicants have disclosed such agents, *e.g.*, IL-2 and IL-4, as well as methods for assessing the exposure of the T11.3 neo-epitope on a CD2 surface receptor, *e.g.*, by flow cytometry (see, *e.g.*, page 21, lines 11-16). Furthermore, Applicants present working examples which demonstrate the use of IL-2 to expose the T11.3 neo-epitope on a CD2 surface receptor (see Example 5 at pages 28 through 29). In addition, as described above, a number of other agents are known in the art and are commercially available, or one of skill in the art can identify an agent that exposes a T11.3 neo-epitope on a CD2 surface receptor and stimulate a T cell response to a tumor utilizing the teachings herein and knowledge available in the art. The ordinarily skilled artisan can, with routine experimentation, further characterize these additional agents using, for example, the assays taught in the specification and those known in the art to easily determine agents “that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor”.

As the examiner is aware, the sufficiency of a disclosure in meeting the written description requirement was recently addressed by the Federal Circuit in the Eli Lilly case in which the Court stated that

[a] description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus *or a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus* [emphasis added].

The Regents of the University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). As articulated by the Federal Circuit, a claim to a genus of chemical compounds satisfies the written description requirement when its accompanying specification either defines by sequence a representative number of its members falling within the scope of the genus or *when its accompanying specification defines the structural features common to a substantial portion of the genus*. The instant specification satisfies this requirement as the claimed genus of “agent” of the present invention is defined by structural features that are described in the specification, recited in the claim, and commonly possessed by its members. Accordingly, Applicants respectfully submit that the rejection of the claims under 35 U.S.C. §112, first paragraph be withdrawn.

Rejection of Claims 92-107 Under 35 U.S.C. §112, First Paragraph

The Examiner has rejected claims 92-107 under 35 U.S.C. §112, first paragraph because the specification does not enable any person skilled in the art to which it pertains, or with which it is most clearly connected, to make and use the invention commensurate in scope with the claims. Specifically, the Examiner states that:

while being enabling for 'LFA-3/CD58, CD49 and CD59' as CD2 ligands and 'B7-1 and B7-2' as the CD28-/CTLA-4-ligands does not reasonably provide enablement for any CD2 ligand or CD28-/CTLA-4-ligands.

In addition, the Examiner has rejected claims 98 and 101-107 under 35 U.S.C. §112, first paragraph because the specification does not enable any person skilled in the art to which it pertains, or with which it is most clearly connected, to make and use the invention commensurate in scope with the claims. Specifically, the Examiner states that:

while being enabling for 'anti-CD2 antibodies and IL-2/IL-4 as agents that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor on the T cell does not reasonably provide enablement for any 'agents' that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor on the T cell.

Applicants respectfully traverse these rejections, and as stated above, in the interest of expediting prosecution, Applicants have amended the claims to specifically recite that the CD2 ligand is CD59, and that the CD28 or CTLA4 ligand is selected from the group consisting of B7-1, B7-2 and combinations thereof.

Applicants incorporate herein the arguments set forth above regarding agents that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor on a T cell, and submit that based on the teachings and guidelines of the present invention as disclosed in the application, in combination with the knowledge of one of skill in the art at the time the application was filed, one skilled in the art could readily identify additional CD2 ligands and/or an agents that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor on a T cell. As stated in *Forman*, "[t]he test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable

amount of guidance." *Ex parte Forman*, 230 USPQ 546, 547 (Bd. App. 1986). As also pointed out by the Federal Circuit in *Northern Telecom, Inc. v. Datapoint Corp.*, 15 USPQ 2d 1321 (1990), "[i]t is not fatal if some experimentation is needed, for the patent document is not intended to be a production specification." 15 USPQ 2d at 1329. See, also *In re Brana*, 34 USPQ 2d 1436 (Fed. Cir. 1995). Applicants submit that it would require no more than routine experimentation to obtain additional agents that stimulate exposure of a T11.3 neo-epitope on a CD2 surface receptor, and thus the specification is enabling for the claimed methods. Accordingly, Applicants request withdrawal of the §112, first paragraph rejection.

Rejection of Claims 11, 12, and 14-17, Double Patenting

The Examiner has rejected claims 92-107 under the judicially created doctrine of obviousness-type double patenting as being "unpatentable over claims 1-12 of U.S. Patent No. 6,451,305. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same or nearly the same methods of stimulating T cell responses to tumor cells modified with the same or nearly the same CD2 ligands, the CD28 ligands or CTLA-4 ligands."

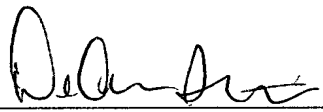
Claims 101 and 104-107 have been canceled thus rendering the rejection moot as it pertains to these claims. Applicants respectfully traverse the rejection with respect to claims 92-100 and 102-103. Upon allowance of the claims, Applicants will address this matter.

SUMMARY

In light of the above amendments and remarks, Applicants respectfully request reconsideration of the subject application. If a telephone conversation with Applicants' Attorney would expedite the prosecution of the above-identified application, the examiner is urged to call Applicants' Attorney at (617) 227-7400.

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Respectfully submitted,

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